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Hideyuki Okabe

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GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER

VO, NGUYEN THANH

ART UNIT

PAPER NUMBER

2618

NOTIFICATION DATE

DELIVERY MODE

04/09/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-2, 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese document 2001-223534 (submitted by applicant, with English translation).

As to claim 1, the Japanese document 2001-223534 discloses a frequency converter (see figure 1) comprising a signal brancher branching means 6 that branches a locally oscillated signal (see the LO port 11) into two signals; a constant impedance element (see filters 7a, 7b) that passes the two signals; and a mixer (see mixers 3a, 3b) that respectively mixes an output from said constant impedance element with a high frequency received signal (see the RF port) and generates an intermediate frequency

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signal (see the IF port; see also paragraphs [0015] and [0021] which disclose RF signal or IF signal can be input signal to the frequency converter), wherein said constant impedance element has have a generally constant impedance in a frequency band of the high frequency received signal (see paragraph [0035] which discloses that the impedances of the filters 7a, 7b are zero in a frequency band of the high frequency received signal). The Japanese document 2001-223534 fails to disclose that the generally constant impedance element is 50 ohms as claimed. Those skilled in the art, however, would have recognized that the above difference would not involve any inventive concept because it would merely depend on which impedance of the filters 7a, 7b one would like to chose for a corresponding operating frequency band. In addition, the specification fails to disclose any unexpected result of having the generally constant impedance element at 50 ohms. On the contrary, the specification does suggest that the generally constant impedance element is 0 ohms (see original claim 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of modify the Japanese document 2001-223534 as claimed, in order to allow the filters 7a, 7b to optimally operate with a particular frequency band.

As to claims 2, 8, signal brancher branching means 6 in figure 1; see also paragraph [0021].

As to claim 4, the functions of filters 7a, 7b would inherently read on the claimed limitations.

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As to claim 5, since the filters 7a, 7b are low pass filters (see paragraph [0035]), their cut-off frequency must be an upper limit of the frequency band of the two signals as claimed.

As to claim 6, the Japanese document 2001-223534 does disclose filters 7a, 7b in figure 1, but fails to disclose that the filters are bandpass filters as claimed. Those skilled in the art, however, would have recognized that the filters 7a, 7b could also be bandpass filters without changing the spirit and scope of the invention of the Japanese document 2001-223534. In addition, the examiner takes Official Notice that such a bandpass filter is known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the filters 7a, 7b of the Japanese document 2001-223534 with conventional bandpass filters, in order to select a desired bandpass of the received RF signals.

As to claim 7, the Japanese document 2001-223534 does disclose filters 7a, 7b in figure 1, instead of a diplexer as claimed. Those skilled in the art, however, would have recognized that the filters 7a, 7b could also be replaced by conventional diplexers without changing the spirit and scope of the invention of the Japanese document 2001-223534. In addition, the examiner takes Official Notice that such a diplexer is known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the filters 7a, 7b of the Japanese document 2001-223534 by conventional bandpass filters whose passband is the frequency band of the two signals, in order to select a desired bandpass of the received RF signals.

As to claim 9, see the diode mixers 3a, 3b in figure 5.

As to claim 10, see a high frequency input terminal 10 in figure 5, an IF band filter 8 in figure 5 and an IF signal output terminal 12.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-2, 4-10 have been considered but are moot in view of the new ground(s) of rejection.

Regarding the newly-added limitation "wherein the generally constant impedance element is 50 ohms" in claim 1, applicants' attention is directed to the rejection to claim 1 above as to why the above newly-added limitation does not make claim 1 allowable over the applied prior art.

Applicants request that the examiner provides an Official USPTO translation of Japanese Patent Publication No. 2001-223534 because the computer translation of the aforementioned Japanese Patent Publication is exceptionally difficult to read. It is noted that the Japanese Patent Publication No. 2001-223534 and its computer translation are provided by applicants, not the Patent Office. Therefore, the Patent Office is not required to provide such an Official USPTO translation.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN VO whose telephone number is (571)272-7901. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Nguyen Vo/  
Primary Examiner, Art Unit 2618